

IDENTIFICATION CHARACTERISTICS OF THE INTERVENTION METHOD “LIFE IN BALANCE” FOCUSED ON SENIORS 65+**Milada KREJČÍ, Václav HOŠEK****Abstrakt**

The paper presents selected identification characteristics as a part of the analysed results from the project “Basic research of balance changes in seniors” carried out in support by the Czech Science Foundation - project GAČR ID 17-25710S in 2017 - 2018. The paper aim is to identify main characteristics of the intervention method “Life in Balance” in the context of social and corporate validity and reliability. The authors consider that such approach is essential for the holistic concept of bio-psycho-social balance as the main gnostic moment of the research project. In the intervention, in total 271 seniors in the age 65+ of different regions of the Czech Republic, e. g. 134 males, Mean: 72.8 SD \pm 7.44, Median: 71.0 (67.0, 78.0) and 137 females, Mean: 76.1 SD \pm 8.03 Median: 76. (69.0, 81.0) participated according research ethic rules. First all participants received complete information about the research process and they signed the agreement with the participation in the study. The content of the research has been examined also by the Ethic committee of College of PE and Sport PALESTRA, which judged the research study as appropriate from ethic view of point. It is argued that main found indicators are relevance, valid, representative and measurable. There are presented results which forms the basis for further research analyse of the project. Presented results show that seniors are able to harmonize life situations productively and efficiently, if an effective programing for them is given.

Keywords

Aging; Bio-psycho-social balance; Health; Programing; Reliability; Validity.

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INTRODUCTION

Well-being plays an important role in the seniors' health, the detailed characteristics of which are further defined. In the sense of a humanistic human concept, physical, mental, social areas of seniors balance can be identified, which are closely related to the main characteristic of the investigated intervention. Physical balance means to be full of energy, in good condition according individual specifics. Mental balance means to have a good memory ability, correct reactions and effective stress management base. Social balance can be expressed as the ability to create harmonious contacts and joy in life with others. The definition of health according to the World Health Organization (WHO, 1948) also declares that the term “health”

means “the state of complete physical, mental, social well-being, and not merely the absence of disease”. To keep or to develop balance is one of the most important foundations of human health. It relates to the level of senior condition and its performance. An important component of physical health and part of the prevention of pathological processes is the balance in breathing frequency. An important factor in bio-psycho-social balance represents diet and body hygiene. The diet of seniors should always be freshly prepared and a significant portion should have also non cooked food as fruits, nuts, vegetables, milk, muesli, etc. Mental health can be defined as balance of a person in cognitive processes corresponding age and individual specifics of memory,

attention and thought processes, when correct and fast reactions in form of responses to stimuli from the external and internal environment are realized.

The document "The long-term program for improving the health status of the population of the Czech Republic" is elaborated with horizons for 2020 and 2030 with the clear declared of the Objective No 5 "Healthy Aging". According that, in 2020 people over the age of 65 should be able to make full use of their health potential and actively participate in the life of society. Demographic forecasts assume that in the middle of the 21st century, the Czech Republic will be among the oldest populations in the world, with more than 40% of the population aged over 60, in the current trends of mortality. In the senior population, the number of people over the age of 80 will increase relative and absolute. In developed countries, there is a clear trend not only to prolong life in old age (according to the survival curve, it is a trend towards values around 85 years), but also to a decrease in functionally serious morbidity, age inadequacy. This not only leads to a desirable quality of life in old age, but also to reduce the cost increase in health care financing. The concept of successful aging is based on the idea that the elderly population is very heterogeneous from a health and functional point of view and requires differentiated approaches and projects. The main health risks in old age are functional (disability, quality of life): manifestations and complications of atherosclerosis, degenerative diseases of the brain (Alzheimer's disease, Parkinson's disease), osteoporosis (especially in connection with falls and injuries), osteoarthritis, chronic obstructive pulmonary disease, sensory impairments (hypacusis, visceral disorders - particularly macular degeneration of the retina and cataracts), depression, nutrition disorders and decadia - hypokinetic syndrome (MPSV, 2017).

Health promotion and disease

prevention is programming provided life in balance, what is always a challenge. Later in life, it seems, there are even more factors that can trip seniors up. Participating in programming of bio-psycho-social balance brings benefits to provide active lifestyle. Research presented by Chicago Dept. of Family & Support Services (2018) declares that seniors with an active lifestyle:

- Are less likely to develop certain diseases. Participating in hobbies and other social and leisure pursuits may lower risk for developing some health problems, including dementia.
- Have a longer lifespan. One study showed that older adults who reported taking part in social activities (such as playing games, belonging to social groups, or traveling) or meaningful, productive activities (such as having a paid or unpaid job, or gardening) lived longer than people who did not. Researchers are further exploring this connection.
- Are happier and less depressed. Studies suggest that seniors participated in what they believe are meaningful activities, like volunteering in their communities, say they feel happier and healthier. Researchers think it might also have long-term benefits, lowering the older adults' risk of developing disability, dependency, and dementia in later life.
- Are better prepared to cope with loss. Studies suggest that volunteering can help with stress and depression from the death of a spouse or other loved one. Among people who experienced a loss, those who took part in volunteer activities felt more positive about their own abilities (reported greater self-efficacy).
- May be able to improve their thinking abilities. Another line of

research is exploring how participating in creative arts might help people age well. For example, studies have shown that older adults' memory, comprehension, creativity, and problem-solving abilities improved after an intensive, 4-weeks acting course.

Presented research shows that people who are sociable, generous, and goal-oriented may feel happier and less depressed than other people. Activities to consider like to get more involved in balance with community or be more socially active.

2 OBJECTIVE AND HYPOTHESES

Principal objective of the paper is to identify main characteristics of the intervention method "Life in Balance", its validity and reliability to the gnostic assumption of the bio-psycho-social development of the balance in seniors' sample 65+.

Based on the objective, the following hypotheses were formulated.

Hypotheses H1: The balance development induced in the "Life in Balance" intervention program will positively affect the results of the physical balance of the participants.

Hypotheses H2: The realized "Life in Balance" intervention results are valid and reliable to the in the selected indicators.

3 METHODOLOGY

From the point of the investigation methodology, methods of analysis, synthesis, induction and deduction were chosen and applied to the analysed intervention method in sense of identifying of categories/characteristics on the base of causal and operational thinking.

3.1 Material and Procedure

In the research, in total 271 seniors in the age 65+ of different regions of the

Czech Republic, e. g. 134 males, Mean: 72.8 SD ± 7.44 , Median: 71.0 (67.0, 78.0) and 137 females, Mean: 76.1 SD ± 8.03 Median: 76. (69.0, 81.0) participated voluntarily, with the informed consent have completed PRE balance testing in selected indicators and after the four-week intervention "Life in Balance. After the four week intervention the participants absolved the POST examination. In the framework of the research, ethical considerations of research work with the elderly were followed and the down describing methods were used.

3.2 Methods

Intervention method

Intervention method "Life in Balance" was developed by Krejčí (2017) in frame of the project GAČR ID 17-25710S "Basic research of balance changes in seniors". This intervention method was elaborated as the four-week coherent intervention program with specific content of training in activities developing the balance of senior 65+ in the bio-psycho-social context. The content can be adapted in a didactic way due to different seniors' specific options, diagnosis and current status. Every week it was realized one wellness training session, when clients learn what they can provide in their daily life.

Every training session had a motto, which was developed in concrete physical, mental and social techniques and exercises for whole week and after that in a coherent cycles.

4 content packages of the intervention:

1st week "You're never alone"

2nd week "Change is always possible"

3rd week "Movement is life"

4th week "Enjoy life and every moment of it"

The optimal length of the training intervention wellness unit is 90 minutes and consists of a motivational quote, body exercises (primarily sitting in a chair, later in other positions), breathing exercises, relaxation techniques, concentration

training techniques and self-awareness. The physical, breathing and relax exercises were adapted from the Yoga in daily Life System (Maheshwarananda, 2013). The program of the exercise is supplemented by discussions focused on ethics, life philosophy, constraints of stressful situations, nutrition and drinking regime, etc. It is optimal to lead 12-15 participants in one training group with 1-2 expert assistants. For each week senior receives a methodological sheet with motivations, tasks and recommendations.

The basic components of the "Life in Balance" intervention program: Relaxation reduces stress and internal tension, helps develop self-confidence and concentration, awakens satisfaction and happiness. The art of relaxation enhances the ability to effectively use the emitted energy. Breathing exercises allow the use of breathing capacity, stimulate and support the metabolic functions of the body, balance the energy system, help relax and calm the mind. Static and dynamic exercises work beneficial on the nervous, locomotor and circulatory system, regulate the function of the internal organs and the internal secretion glands. Self-analysis develops judgment, inner freedom, and helps confidence. Nutrition also helps to improve movement coordination and balance, e.g. resveratrol substance that is best absorbed from natural food sources such as red grapes, blueberries, cranberries and peanuts. Daily regime and harmonious environment influence the bio-psycho-social balance. Environmental care begins with the each individual - to reduce noise, clean air, etc. in the environment where the concrete senior lives.

Diagnostic methods

The test "Anamnestic Self-Assessment" was developed by Hošek (2017) in frame of the project GAČR ID 17-25710S "Basic research of balance changes in seniors". We present here the

new diagnostic tool in specific details as the first part of the results.

"Tinneti's test of Balance" (Tinneti, et al. 1990) evaluates the balance ability score of seniors and serves to evaluate the results of the intervention. Evaluates the overall balance score from the components: balance score and walk score.

Statistics

For the statistical analysis of the relationships between the individual dependent variables and the factors of the body explaining the inter-individual gender variability, the ES / KS group and the intervention phase (independent variables), a model of variance analysis was used with the factors and interactions of all orders followed by the Bonferroni Multiple Comparison Tests.

4 RESULTS AND DISCUSSION

4.1 The test "Anamnestic Self-Assessment" as a result of the project GAČR ID 17-25710S "Basic research of balance changes in seniors"

The test "Anamnestic Self-Assessment" consists of two single pages, each of the 10-points graphical self-report scales (see Table 1, Table 2).

The first page "E" is focused on self-assessment of the own "Energy balance (E)" between the energy intake and expenditure.

The second page is focused on self-assessment of the own "Social balance (S)", analogously as in "E", but focused on an assessing of the balance in social context.

A one-time using of the test "Anamnestic Self-Assessment" gives to researcher insight into the self-assessment of proband, as he sees himself between two counterparts.

Reuse allows to the researcher an opportunity to evaluate PRE/POST differences caused by the intervention.

Time to fill the test is not limited. For possible questions during filling, the administrator answers stereotypically, trying

to break discussing of some “dilemmas”.

Evaluation of the test results in a score. Harmonics are represented by values around fifty (fifty-fifty in relation to extremes).

Values of a score above 50 mean for the “E scale” a predominance of energy output over income and values of a score below 50 for convenience. In the “S scale” values of a score above 50 symptoms a social disharmony. Lower values of a

score 50 are scanned for non-confidence. More important there are *Intra-personal shifts* during a retest. They can be interpreted as the result of harmonization as a result of intervention.

The manual of the test “Anamnestic Self-Assessment” is available to receive via the correspondence with authors of the presented paper.

Table 1 1st page of the test Anamnestic Self- Assessment “E” focused on “Energy balance

ANAMNESTIC SELF-ASSESSMENT (E)		SURNAME.....
Left and right are described extremes. Please, indicate on line below, where about you currently are.		
Example: sad _____ cheerful		
Mark means: not so, not so, rather a bit positive “happily”.		
1. Comfortable, inert, passive	_____	Energetic, vital, full of motivation, initiative
2. I need to lose weight I'm overweight	_____	I need to gain weight I'm underweight
3. I usually do not eat all Absence of appetite	_____	I usually add food I'm almost hungry
4. I do not like unnecessary strain I can hardly get to exercise	_____	I like a hard training
5. I do not have time	_____	I can idle, I'm a “couch type”
6. I like food very much Often I like overeating	_____	Food for me means not so much I'm not a gourmet
7. I cannot stay for long in quite Actively I seek for an activity	_____	I love my peace and quiet I can be “lazy”
8. Soon I get tired, I cannot mobilise self to an effort	_____	I know boundary fatigue, what it means “to ramp down on bottom of the forces”
9. I control the amount of food regarding to energy output in my regime	_____	I eat according to my appetite
10. I do not like sweat of an effort	_____	Sweating during an effort I do not mind

Table 2 2nd page of the test Anamnestic Self- Assessment "S" focused on "Social balance"

ANAMNESTIC SELF-ASSESSMENT (S)	SURNAME.....
On the left and right, contradictory situations are described. On the line between them, mark the comma where you are currently seeing where you are, your opinion. Example: tense _____ calm _____ Mark means: rather a bit tense of expectation, what "turns out"	
1. I'm non-conflict, "cold"	I'm a "nervous" who is easily upset
2. In my youth I was beating of my parents	I never got a beating of my parents
3. I have a lot of good friends	I'm rather "solitaire" without contacts
4. "Italian marriage" is quite a natural	Parents should avoid of any quarrel for the children
5. Wiser retreats	It is clever to be cheeky
6. Fight fire with fire	Do not retaliate, better to set "second cheek"
7. Harmonic relationships are big support for me	I am not lucky in my relatives
8. I believe in harmonic marriage illusion	Long-term stable marriage is an
9. I do not even remember on my last serious quarrel	Almost every day I have a quarrel with someone
10. An eye for an eye, a tooth for a tooth)	Christian blessing, "You stone, I breads"

4.2 Results of the identification of the characteristics of the intervention

In the following overview of the results the selected analysed balancing results are presented in the context to the validity and reliability to the intervention method "Life in Balance" by input and output measurements. Followed characteristics of the intervention method "Life in Balance" were analysed with significant validity:

- Use of the release techniques;
- Use of techniques for the development of physical and mental balance;
- To be more respectful to people and social environment;
- To know about the benefits of healthy eating and drinking;
- To manage fear according to individual possibilities.

It can be said that all mental health regulating devices are based on a two-phase process in which the first stage is undisturbed self-perception (body, breath, etc.), and in the second phase regulatory measures come to return from the state of disharmony (a kind of "derailment" load) into a state of harmony, calmness, balance. There are self-regulation techniques. It is very efficient to master at least one autoregulation technique for the daily everyday life of senior 65+. Hetero-regulation techniques are widely used as a service to clients.

After the intervention program "Life in Balance", a significant improvement in the overall score of the physical balance was observed, see Figure 1, $F = 128.4$, $p < 0.001$. Comparing PRE and POST measurement after the intervention program "Life in Balance", there was found a positive significant improvement in the results of the Tinneti score.

The above results confirm the H1 hypothesis: The balance development induced in the intervention program "Life in Balance" will positively affect the results of the physical balance of the participants.

Balance development was analysed in the Tinneti test characteristics as the positive significant changes in body posture and spine flexibility in the POST examination, see Figure 1. The senior female organism appears to respond better to the development of balance with increased affinity for the development of spine flexibility. Of course, the biomechanical, organic aspect of the analysed result plays a significant role in females. This phenomenon could also have been a factor of a higher amount of senior females than senior males in the presented research project what corresponds approximately to the proportion of females to males in the seniors population in the Czech Republic.

The results are also in line with the declarations of Hodaň and Horák (2014) in the field of socio-cultural kinanthropology and with the previously expressed conclusions of Perrin, Gauchard, Perrot and Jeandel (1999), which state that differences between women and men in terms of balance are increasing with age to the detriment of women.

Figure 1 Results of the balance progress in ES of seniors according the Tinneti test in PRE-POST Intervention method "Life in Balance" ($n = 315$ seniors; 73 males; 242 females) $F = 128.4$, $p < 0.001$

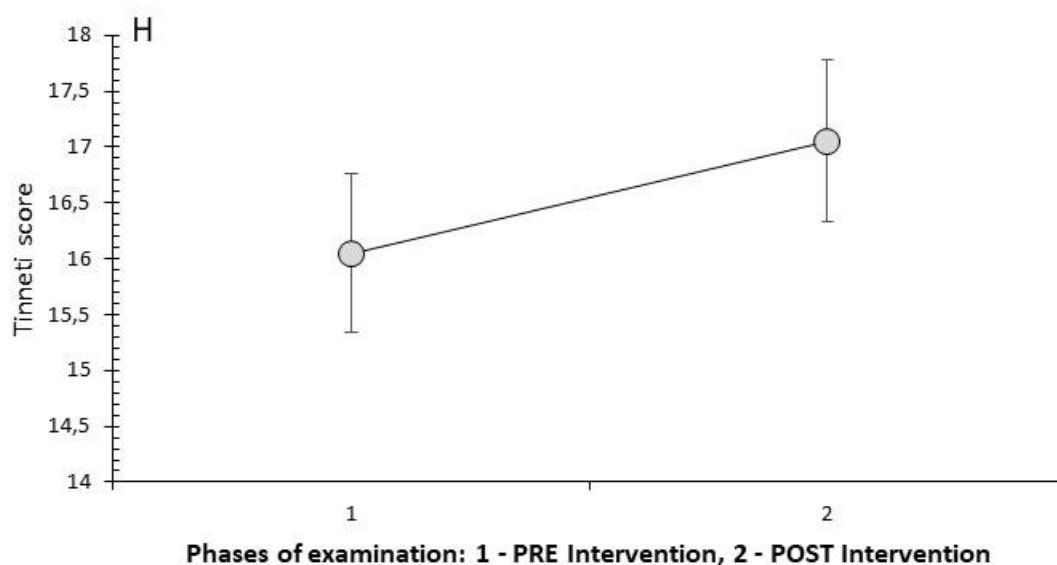
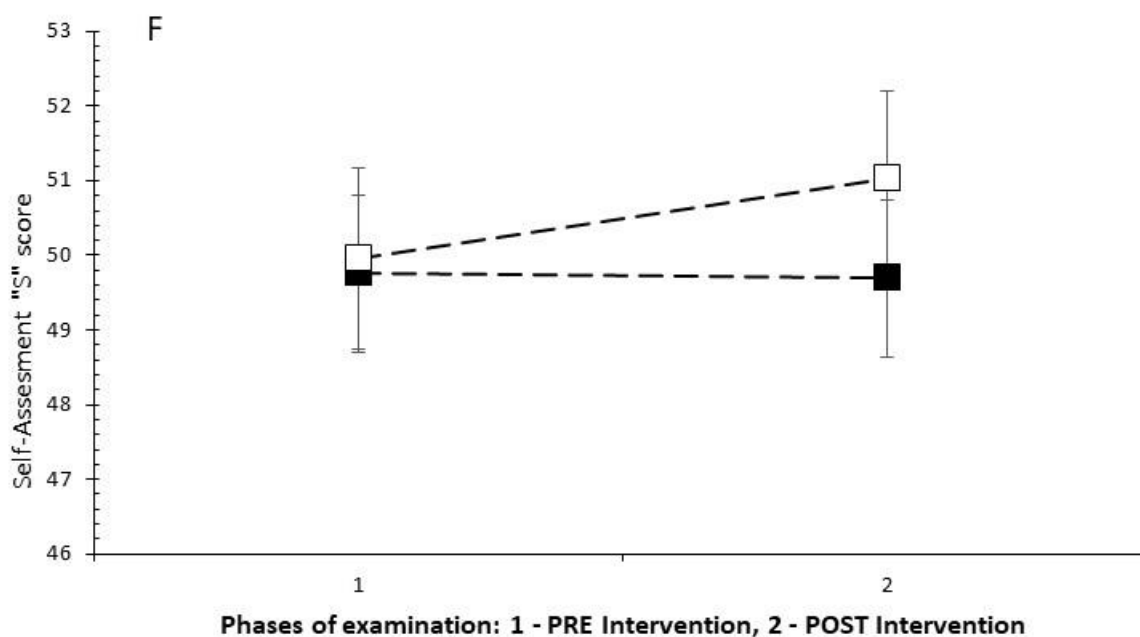


Figure 2 Results of the progress in "S" scale in ES seniors according the test "Anamnestic Self-Assessment" in PRE-POST Intervention method "Life in Balance" (n = 315 seniors; 73 males; 242 females) $F = 128.4$, $p < 0.001$



The analysed results of the study further show that seniors who have completed a four-week intervention program "Life in Balance" have mastered the ability to relax and unblock tensions, particularly in the context with social sphere, see Figure 2.

There were identified followed characteristics valid to the intervention method "Life in Balance":

- Significant development of the ability to release (-0.89 , $p < 0.01$);
- Significant development of physical balance in stay with closed eyes (0.7 , $p < 0.01$);
- Significant development of "S" scale in the test "Anamnestic Self-Assessment" (0.62 , $p < 0.001$);
- Significant decreasing of fear in social context (-0.75 , $p < 0.001$);

These results confirm the H2 hypothesis. "The realized "Life in Balance" intervention results are valid and reliable to the in the selected indicators". Balance

is reached when the energy forces of the body flow freely in equilibrium (Dunn, 1959; Myers, 1992; Travis & Ryan, 2004). The dynamic notion of wellness sees it as a process of personal growth and adopting behaviours in multiple dimensions that improve functioning, rather than as an outcome (Dunn, 1959; Jonas, 2005; Travis, Callander, 1990). It is possible to discuss that physical manifestations and behaviours interact with the emotional processes and with the processes of controlled social relations in the equilibrium plane - non-conflict, in terms of the harmonious stabilization of the interest of the other person.

They further state that the development of physical balance has a positive effect on self-control, which significantly reduces the risk of falls and injuries. We can deduce that physical exercises of balance allow for postural control, reduce physical and mental effort and allow for longer activities providing. From this, it can be deduced that the

ability to be active physically and mentally contributes to the possibility of richer and better social contacts and contributes to the social satisfaction in the seniors' life.

Stará (2016) declares that where health consists of social, spiritual, emotional and physical components, wellness is a positive state of being where these components are all functioning optimally with balance and harmony. Where health is a state of being, wellness is the process of being or becoming that moves one the state of imbalance in everyday life. The person who learns to relax gets a landmark. It is easier to notice when there is tension in it, and it can help to remove the tension. Equally, the development of balance allows for perceptions of the balance from the different spheres of life. Registering an imbalance is a sign that it is necessary to "centre" it.

5 CONCLUSIONS

On the base of the analysed and discussed facts, the following conclusions can be drawn. The feeling of imbalance, whether in the bio-psycho-social context, is a signal to the senior that it is necessary to "centre" self. Presented results show that seniors are able to harmonize life situations productively and efficiently, if an effective programming for them is given. It is possible to apply the intervention method "Life in Balance", i.e. to lead a senior to a behavioural pattern that creates a bio-psycho-social balance and restores the natural defence of the organism. There is an emphasis on the optimal health status of individuals and groups of seniors, with two key determinants of goals - the realization of the full potential of the individual in the physical, mental and social level.

Mental balancing results from the relationships between the environment and the mental health of a person, where the necessary part is regular mental hygiene. Mental hygiene helps improve

psychosomatic health and manage stress situations better. The task of mental hygiene is not to remove stress factors, but to learn to regulate the unfavourable situations.

The research study has shown that the intervention method "Life in Balance" is feasible for seniors in senior homes. Its application is real in the senior house in elderly, including seniors with different types of disability.

The results confirmed the health and social benefits of the intervention method "Life in Balance" of the GAČR research project. The motivation of seniors to absolve and to implement the intervention method "Life in Balance" was high. We did not meet with any negative response of seniors. The goal of developing the senior's balance in the bio-psycho-social context was very interesting for participants and actively involved them in participating in it. There were identified significant characteristics valid to the intervention method "Life in Balance, as the ability to release, to develop physical balance in stay with closed eyes and in the decreasing of fear in social context.

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